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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/604,796	06/27/2000	Kyeong Jin Kim	8733.20134	4009

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EXAMINER

RUDE, TIMOTHY L

ART UNIT PAPER NUMBER

2871

DATE MAILED: 10/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/604,796

Applicant(s)

KIM ET AL.

Examiner

Timothy L Rude

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show items 3, 5, 6, 7, 9, and 11 as described in the specification. The specification, beginning on page 8, states that certain parts numbered 3, 5, 6, 7, 9, and 11 are shown in the figures, but they are not illustrated, and that renders the specification inconsistent with the drawings and misleading. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. However, since the parts numbered 3, 5, 6, 7, 9, and 11 are well known in the art of liquid crystals, this objection may be overcome by amending the specification to delete those part numbers that are not illustrated while retaining the description of said parts, thereby correcting the misleading inconsistency between the drawings and the specification.

### ***Claims***

2. Claims 1-13 are amended and the objections to claims 2, 8, and 12 are withdrawn. Claims 14-37 are added, necessitating new grounds for rejection. No new matter is added.

***Claim Rejections - 35 USC § 112***

3. Claim 7 is amended as cited above, and the rejection of claim 7 under 35 U.S.C. 112, first paragraph is withdrawn.

4. Claims 1-7 and 9-11 are amended as cited above, and the rejection of claims 1-7, and 9-11 under 35 U.S.C. 112, second paragraph is withdrawn.

***Terminal Disclaimer***

5. The terminal disclaimer filed on 01 August 2002 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 24 November 2019 has been reviewed and is accepted. The terminal disclaimer has been recorded. The rejection of claims 1, 3-6, 9-11, and 13 under the judicially created doctrine of obviousness-type double patenting is withdrawn.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (APA) in view of Yamada et al (Yamada) USPAT 6,344,883.

As to claims 1 and 20, APA discloses in Figure 1 and in the description of the related art, a multi-domain liquid crystal display device comprising: first and second substrates facing each other and having a pixel region and a liquid crystal layer between the first and second substrates (inherent).

APA does not explicitly disclose a first dielectric frame on one side of the pixel region; a second dielectric frame on another side of the pixel region; and a dielectric protrusion between the first dielectric frame and the second dielectric frame.

Yamada discloses in Figures 10A-10D (col. 19, line 40 through col. 27, line 35) a dielectric frame, 36, (OMR83, col. 26, lines 45-62) in a region other than a region where said pixel (pixel region in 10C) electrode is formed on one or both of the substrates (col. 20, lines 8-12), said dielectric frame(s) distorting electric field applied to said liquid crystal layer (inherent to dielectric material, OMR83), and an alignment layer, 38a and 38b, on at least one substrate between said first and second substrates. Yamada also discloses in Figure 15 a centrally located dielectric convex portion, 69 (Applicant's dielectric protrusion), (col. 26, lines 45-62).

Yamada is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a first dielectric frame on one side of the pixel region; a second dielectric frame on another side of the pixel region; and a

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dielectric protrusion between the first dielectric frame and the second dielectric frame to the LCD of APA to avoid a rough display in gray scales (col. 13, lines 36-46).

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of APA with the dielectric frames and protrusions of Yamada.

As to claims 2-4, 7, and 26-29, APA does not explicitly disclose the multi-domain liquid crystal display device wherein the dielectric protrusion is expanded from the first substrate to the second substrate or from the second substrate to the first substrate.

Yamada discloses in Figure 15 a dielectric protrusion, 69, expanded from the first or second substrate (col. 26, lines 45-62).

Yamada does not explicitly disclose the dielectric protrusion, 69, expanded to the opposite substrate, however, it is well known in the art of liquid crystals to use dielectric convex portions as spacer elements which expand to the opposite substrate.

Yamada is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a dielectric protrusion expanded from the first substrate to the second substrate to control the liquid crystal orientation in a symmetrical pattern while providing support as a spacer.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of APA with an expanded dielectric protrusion of Yamada on either the first or second substrates.

As to claims 5, 6, 30-33, and 35-37, these are all obvious variations on the invention disclosed by APA in view of Yamada and are therefore not considered patentably distinct. If the applicant does not agree, a restriction might be appropriate.

As to claims 9-11, 14-19, 21-25, and 34, mere duplication of parts is an obvious design variation, not patentably distinct unless unexpected results are obtained.

As to claim 13, it is well known in the art of liquid crystals to divide a pixel into a plurality of independently driven regions in order to provide for a color display.

7. For convenience, Applicant may also review Lien USPAT 5,907,380; Colgan et al USPAT 6,256,080; Saito et al USPAT 6,304,308; and Horie et al USPAT 6,061,117.

### ***Response to Arguments***

8. Applicant's arguments filed on 01 August 2002 have been fully considered but they are not persuasive.

#### **Applicant's ONLY arguments are as follows:**

(1) Parts 3, 5, 6, 7, 9, and 11 are properly referenced in the specification.

(2) Applicants submit that claim 7, as amended, is enabled.

Examiner's responses to Applicant's ONLY arguments are as follows:

(1) It is respectfully pointed out that parts 3, 5, 6, 7, 9, and 11 are referenced in the specification as being shown in the figures (beginning at page 6, 3<sup>rd</sup> paragraph). This renders the drawings inconsistent with the specification. Correction of the drawings or the specification is required to overcome the objection, above.

(2) Examiner respectfully acknowledges that claim 7, as amended, is enabled without the addition of new matter.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (703) 305-0418. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William L Sikes can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



Timothy L Rude  
Examiner  
Art Unit 2871

TLR  
October 15, 2002



TOANTON  
PRIMARY EXAMINER